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Comparative Case Study to Identify Opportunities to Strengthen Federal-Tribal Shared Stewardship of Wild and Scenic Rivers

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The Aldo Leopold Wilderness Research Institute (ALWRI) is an interagency national research facility administered by the Rocky Mountain Research Station, USDA Forest Service. ALWRI is the only federal research program in the United States dedicated to the development and exchange of knowledge critical for stewarding the nearly 112 million-acre U.S. National Wilderness Preservation System and similarly protected wild spaces, including Wild and Scenic Rivers. The ALWRI charter, signed in 2023, has five research priority areas, including a focus on shared stewardship to improve our understanding of coproduction approaches and abilities to harmonize multiple knowledge systems for wilderness stewardship.



Cover: Top left—Old Fossil Creek Dam, Coconino National Forest. Top right—Canoeing on the Eleven Point WSR, Mark Twain National Forest. Lower right—Fossil Creek, Coconino National Forest. Lower left—Swimmers in Fossil Creek, Coconino National Forest. USDA Forest Service photos.

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Summary and Opportunities to Strengthen Shared Stewardship

In recent years, the U.S. Federal government has advanced shared stewardship (see *Study Background* for definition) of Federal lands with American Indian Tribes across land management agencies. Yet little is understood about how these efforts are carried out in the context of Wild and Scenic Rivers (WSRs). The WSRs are managed across four Federal land management agencies: the Bureau of Land Management, the Forest Service, the National Park Service, and the U.S. Fish and Wildlife Service. Rivers designated under the WSR Act are managed to protect their free-flowing, undammed quality, along with Outstandingly Remarkable Values (ORVs). The ORVs are rare, unique, or exemplary features at a regional or national scale and are categorized as scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values. These values are identified in the enabling legislation at the time of designation or in the Comprehensive River Management Plan (CRMP), which outlines management of the river designation (USDA 2020).

To better understand what leads to successful Federal-Tribal WSR shared stewardship, we interviewed WSR staff and Tribes to build a comparative case study between two rivers managed by the Forest Service: the Eleven Point WSR in Missouri and the Fossil Creek WSR in Arizona. We conducted one-on-one interviews with key Forest Service representatives across both rivers (n=14) and one group interview on Fossil Creek with three Yavapai-Apache (YAN) Tribal representatives to identify and examine key perspectives of shared stewardship.

Interviews revealed that historical context remains foundational to Federal-Tribal relationships, especially regarding the continued impacts of forced removal and relocation of the Tribes. However, Tribes retained strong connections to their homelands, and Federal government representatives leveraged the WSR designation to develop innovative approaches to protect those connections. Mutual respect was required to implement shared stewardship, and was built through early, frequent, and clear communication and commitment to relationship building. Efforts by Forest Service representatives to meet Tribal representatives at their desired times and locations was critical for this relationship building. In both cases, a confluence of natural resource-related issues on Federal lands, including those impacting the WSR ORVs, led Federal and Tribal leaders to collaboratively initiate shared stewardship efforts for the WSR. Flexible deadlines combined with proactive management of WSRs also enabled Tribal representatives to respond to requests for comment and to develop a shared vision alongside Forest Service representatives (fig. 1). Shared stewardship outcomes varied and included the formalization of work agreements and management plans, increased Tribal access to customary lands, shared resource monitoring, and reinforced lines of communication between governments. We identified several opportunities to build Federal capacity for engaging in WSR shared stewardship with Tribes, including those that are most immediately actionable (short-term), and those that may take longer to implement (medium- and long-term) (table 1).

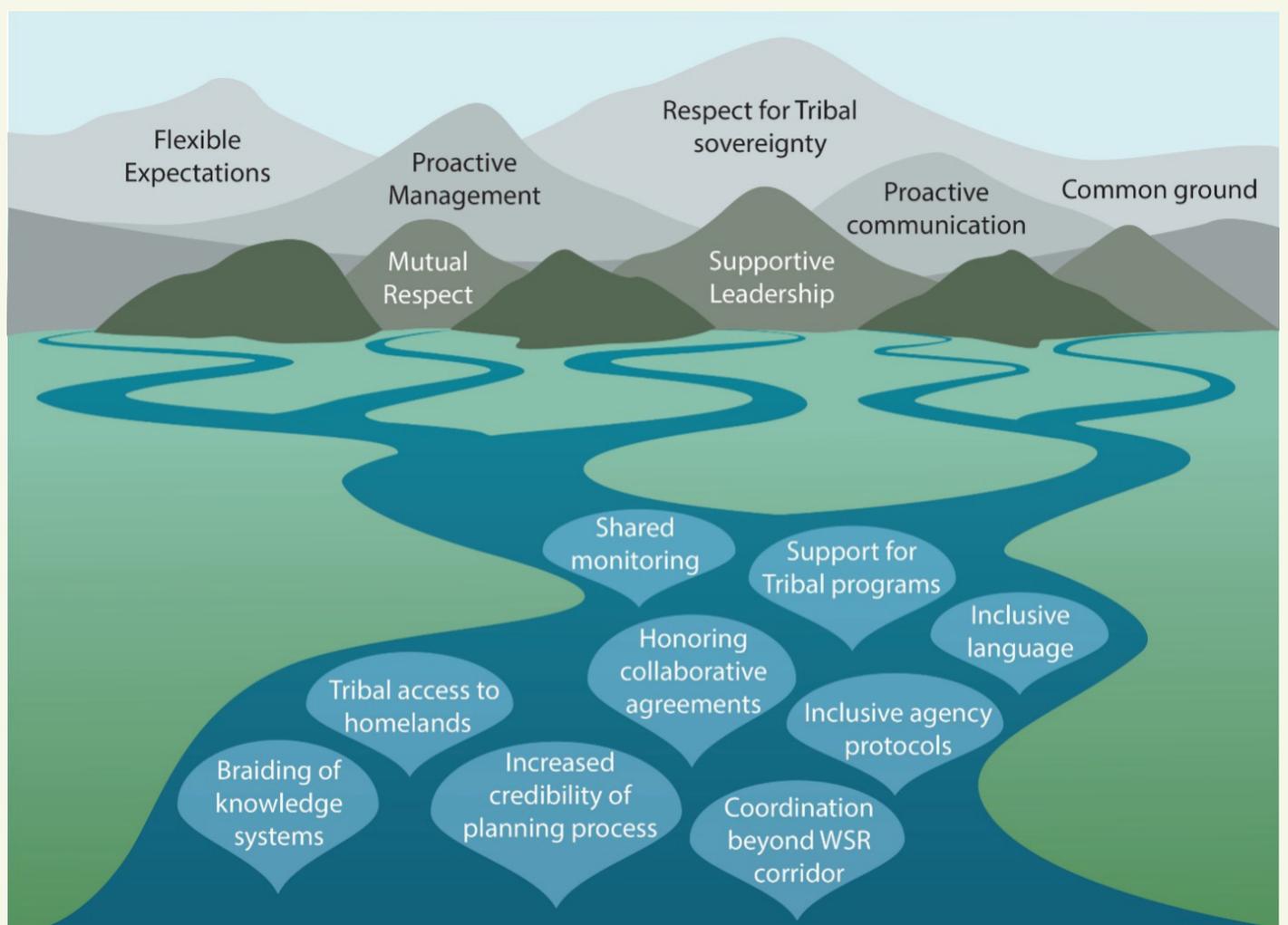


Figure 1—Preconditions for successful shared stewardship, labelled in the mountainous headwaters, flow into a variety of outcomes, including those shown as blue drops in the river.

Table 1—Opportunities to strengthen Federal capacity to engage in Federal-Tribal WSR shared stewardship, from short to long-term actions.

Time period	Opportunities
<p>Short-term</p>	<p>Update matrix of river manager core competencies to enable hiring managers to identify candidates with a foundation of cross-cultural capacities.</p> <p>Crowdsource trustworthy and comprehensive reading lists pertaining to relevant Tribes, including historical government relations, land uses, and impacts of policies on Tribes.</p> <p>Identify available agency resources and pool relevant Tribal training materials, with an emphasis on:</p> <ul style="list-style-type: none"> • Recognizing beliefs and values, identifying issues of common interest, and developing a shared path forward. • Relationships built in place to enable informal staff-to-staff consultations, including through casual drop-ins or shared meals. • Stepwise approaches to advance mutually beneficial agreements for on-the-ground management work (e.g., how to develop and leverage Section 106 of the National Historic Preservation Act [Section 106] Programmatic Agreement or Good Neighbor Authority).
<p>Medium-term</p>	<p>Bring in support from internal and external third parties with expertise for trainings and consultations to:</p> <ul style="list-style-type: none"> • Support participation from agency specialists to facilitate the interdisciplinary CRMP revision process, especially balancing agency and Tribal priorities and timelines. • Strengthen Tribal components in CRMP trainings (especially those led by external parties and/or NGOs), by including Tribal representatives as leaders and participants.
<p>Long-term</p>	<p>Create competitive opportunities to support:</p> <ul style="list-style-type: none"> • Development of diverse case studies and best practices with more agencies and more Tribes, including funding to build a comprehensive database of resources • Funding for co-stewards, particularly removed Tribes, to travel to WSR sites on ancestral homelands to strengthen shared understanding of issues and recognition for shared stewardship efforts and outcomes • Co-created communication and interpretation materials to encourage respectful visitation and use of the WSR • Mentorship program for more experienced Federal Tribal liaisons to foster learning of less experienced Federal staff

Key Findings

- The WSRs have been and will continue to be important sites for human history and culture, representing areas where present-day and historical use overlap in ways that can either be conflicting or compatible with Tribal values, worldviews, and/or culture. Federal managers shared that agencies have not always valued relationships with Tribes or respected Tribal treaty rights, and that **commitments to WSR shared stewardship offer opportunities to transform Federal-Tribal relationships for the better.**
- Although many different Tribes shared historical connections with the WSRs, **CRMP revisions were advanced with one Tribal nation per river** due to a combination of factors, including Tribal leadership and capacity. Many participants understood that the success of CRMPs required integration of Tribal voices, and Forest Service representatives and Tribal governments worked together in a variety of capacities to build additional shared stewardship efforts with other Tribes.
- Challenges and opportunities around Federal-Tribal shared stewardship of WSRs did not significantly differ from those of other land management designations. However, **the ability of Tribes to inform CRMP and ORV development and monitoring** highlighted that WSRs may offer another important context for Federal-Tribal shared stewardship. **Federal-Tribal shared stewardship may improve WSR management** because Tribal perspectives of WSRs, desired conditions, and preferred ORVs may offer a more holistic approach to river management. Some managers thought that the general public may better receive messages of resource protection if Tribal perspectives and culture are incorporated.
- It can take years to develop meaningful relationships that foster effective communication and mutual respect, but these relationships can proactively mitigate undesirable impacts on WSRs. **Formalization of relationships through signed agreements, formal contributions to planning processes, or working groups that meet regularly may require more flexible deadlines and creative approaches** to authentically incorporate Tribal values, perspectives, and management priorities.
- There are many challenges to sustaining Federal-Tribal relationships, including: (1) abrogated agreements and generations of mistrust, (2) Federal and Tribal government staff turnover, (3) changing directives and management priorities, (4) limited Tribal capacity to engage, and (5) a lack of respect for sacred sites by the general public. **Strengthened cultural competencies and capacity of Federal agencies and representatives may mitigate these challenges and support effective Federal-Tribal shared stewardship.**

Overview of Cases

We engaged with Federal and Tribal representatives to develop a comparative case study examining shared stewardship of the Eleven Point and the Fossil Creek WSRs (table 2).

Table 2—Summary findings from both cases comparing key actors involved in codevelopment of the CRMP, issues, opportunities, and outcomes involved with strengthening shared stewardship.

Case	Eleven Point WSR	Fossil Creek WSR
Involved Forest(s)	Mark Twain National Forest (MTNF)	Coconino (CNF) and Tonto National Forests (TNF)
Involved Tribe	Osage Nation	Yavapai-Apache Nation (YAN)
Involved Forest Service representatives	Archaeologists, forest supervisor, recreation planner	Archaeologists, district rangers, recreation planner; Tribal liaisons, Wild and Scenic River manager
Involved Tribal representatives	Tribal Historic Preservation Office director and archaeologists	Cultural Office archaeologists and other staff, Tribal Council, Tribal elders
Tribal relationship with WSR and surrounding area	The Osage Nation were encroached upon starting in the early 1800s before forced removal, beginning in 1871. They currently have a reservation in Oklahoma but retain significant cultural and spiritual sites along the Eleven Point River, including the WSR designation in Missouri.	Areas of the Fossil Creek corridor are “beyond sacred” to Western Apache Tribes, especially the Dilzhe’e Apache of the YAN—several of whom lived along Fossil Creek, including the WSR designated portion, until the 1950s when their homes were bulldozed by the utility company, Arizona Public Service.
Priority issues that necessitated changing representative/agency relationships	The necessity to manage damage from a 1,000-year flood and the unrelated faunal disturbance of an Osage burial mound along the WSR prompted the Forest Service to strengthen how they carry out work with the Osage Nation Historic Preservation Office.	Increases in visitor use following dam removal and WSR designation threatened existence of and Tribal access to cultural sites. The Forest Service worked to reduce visitor impacts, engaged the YAN in CRMP development, and has worked with the YAN iteratively to improve Tribal access and protect cultural sites.
Policy mechanisms leveraged for shared stewardship	Improving compliance with Section 106 strengthened relationships and enabled the Forest Service to secure a Programmatic Agreement with the Osage Nation for historic preservation work, especially as related to cultural, funereal, and spiritual sites.	Formal consultation enabled the YAN’s contribution to the CRMP. Section 106 was leveraged to identify cultural ORVs and to pursue designation of a Traditional Cultural Property within Fossil Creek. A Forest Service Challenge Cost-Share Agreement with the National Association of Tribal Historic Preservation Officers enables Tribal members to lead monitoring of cultural ORVs.

Table 2 continued.

Case	Eleven Point WSR	Fossil Creek WSR
Outcomes of WSR shared stewardship	<p>Programmatic Agreement consultations created trust to work through CRMP process and advocate up the chain-of-command for more meaningful heritage-related ORVs and rewording of pre-history and history ORVs to pre-European contact and Euro-American history. The Osage Nation added their perspective to the CRMP as an appendix to inform management of pre-European contact historical ORVs. The MTNF and the Osage are presently pursuing other shared stewardship of cultural resources beyond the WSR designation.</p>	<p>The YAN were formally included in the development and drafting of ORVs within the CRMP. Tribal access to Fossil Creek was improved by forming and iteratively improving a Tribal permit system for access. The YAN and the Forest Service nominated a Traditional Cultural Property along the WSR corridor. Relationships strengthened through WSR shared stewardship efforts have supported other shared stewardship efforts, including Emory oak restoration.</p>
Key dates in WSR designation and Tribal shared stewardship	<p>Eleven Point WSR was one of the initial eight WSRs (1968). Turnover in MTNF leadership in 2016 initiated efforts to build Tribal relationships. Updates on CRMP began in 2021 and the final revised CRMP was signed in 2024.</p>	<p>A longstanding working relationship between the YAN and the CNF pre-dated the 2009 Fossil Creek WSR designation. The Coconino National Forest and YAN worked together to develop the CRMP and ORVs beginning with the 2009 designation through CRMP signature in 2021. Implementation of cultural values ORV monitoring began in 2021. Updates to the Tribal access permit system occur iteratively, most recently in 2023-2024.</p>
Key actions implemented for shared stewardship	<p>Agreeing to meet the Tribe on their terms (location, timing, with certain staff). Meaningful recognition that sacred sites are a cultural resource. Elevated Osage Nation legal status to Invited Signatories of Forest Service Section 106 programmatic agreements.</p>	<p>Formation and regular meetings of the Fossil Creek working group. Staff-to-staff consultation on the YAN reservation to co-develop the CRMP, ORVs, and ORV monitoring plan. Development of Tribal access permit system. Monitoring of the cultural ORV performed with high-school-age Tribal youth and elders.</p>

Eleven Point WSR

The Osage peoples occupied lands in present-day Missouri and Arkansas from as early as 500 C.E. The name *Osage* translates to Children of the Middle Waters, indicating the importance of rivers for both cultural and spiritual reasons. Sacred burial sites of the Osage are associated with caves, rock shelters, cairns, and mounds found along the Eleven Point River and surrounding landscape. Starting in 1808, the Osage Nation signed a series of treaties with the westward expanding U.S. government and were ultimately forced to cede the vast majority of their homelands. As a result, the Osage are considered a removed Tribe. In 1872, they purchased reservation land in northeast Oklahoma that comprised a small portion of their original homelands.

The Eleven Point River is one of the original eight rivers designated with the passage of the WSR Act in 1968. It is located on Osage homelands in the Ozark Mountains on what is now the Mark Twain National Forest, an important timber-producing forest in Missouri, and forms the western border of the Irish Wilderness. With the hiring of a new forest supervisor in 2016, the Mark Twain National Forest began to prioritize relationships with Tribes, especially the Osage Nation who historically had a tumultuous relationship with managers of the Mark Twain National Forest. The forest supervisor recognized past injustices and promised to start their relationship on a new path, starting with a Forest Service visit to the Osage Nation.

While there, Osage representatives requested that the Mark Twain National Forest prioritize Section 106 compliance under the National Historic Preservation Act of 1966, which requires Federal agencies to consult with American Indian Tribes for any activity that may adversely impact lands with Tribal religious or cultural significance. This was seen as foundational for enacting shared stewardship; as one Eleven Point manager emphasized: *“It's important to have good [Section] 106 and other good resource conservation practice in place to begin with, before you start launching into post-106, post-compliance, stuff like shared stewardship.”* Amending their process for compliance with Section 106, the Mark Twain National Forest signed a Programmatic Agreement with the Osage and nine other Tribes, the Federal Advisory Council on Historic Preservation, and the Missouri State Historic Preservation Office. This also elevated the Osage Nation's legal status to Invited Signatories of Forest Service Section 106 agreements, meaning they were invited along with nine other Tribes to review and comment on the scope of work for all of the Mark Twain National Forest's outgoing contracts. The relationship that resulted from this agreement became especially valuable as environmental impacts were discovered at important Osage burial sites and during the aftermath of a historic 1,000-year flood in 2017 that required the Forest Service to take emergency actions to protect life and property.

The Eleven Point River CRMP was originally written in 1975, and by 2021 was well overdue for an update to better serve modern needs and uses of the river. The Mark Twain National Forest assembled an interdisciplinary team, led by a Forest Service Enterprise Team member, who leveraged the improved relationship between the Mark Twain National Forest and the Osage Nation to collaborate with the director of the Osage Nation Historic Preservation Office (ONHPO). Together this team outlined updates to the CRMP that better reflected the Osage Nation's values, priorities, and culture.

Osage perspectives were incorporated in the CRMP revisions in two ways. First, language around *pre-history* as an ORV in the CRMP was changed to *pre-European contact*. Second, the Federal government and the ONHPO agreed that including the Osage perspective as an appendix, rather than integrating Tribal perspectives into the main text of the CRMP, would be the most effective way to codify their values and culture as management directives without diluting the Tribe's voice. This required more flexibility on the timeline for delivering CRMP drafts but was key to the success of this shared stewardship arrangement. The director of the ONHPO was recognized for her contributions with an Outstanding Wild and Scenic River Stewardship award from the Forest Service in December 2022; the CRMP was signed by the forest supervisor of the Mark Twain National Forest in 2024. Additional co-stewardship efforts have continued since the signing of the 2024 CRMP, including exploration of options to further protect Osage sacred sites from recreational development.

Fossil Creek WSR

Fossil Creek flows through the Tonto and Coconino National Forests in Arizona and is managed by the Red Rock Ranger District on the Coconino National Forest through a formal delegation of authority. This area includes the original homelands of the Western Apache Tribes (a broad term used to refer to several bands of Apache Tribes throughout Apache homelands) as well as the Northeast Yavapai peoples. These two represent distinct cultures that have become blended through a shared history of relocation and assimilation.

Fossil Creek is considered the birthplace for all Western Apache peoples and continues to be significant to their mythology, culture, and history. From the 19th century to about 1950, today's WSR corridor was occupied by some Western Apache families who avoided the forced relocations and assimilation experienced by many Yavapai and Apache people during that time. When Western Apache and Yavapai people were released from the San Carlos Reservation in 1900, many moved back into their traditional homelands and reconnected with those hiding in Fossil Creek and the cultural practices they preserved.

In 1909, the U.S. government re-established the Camp Verde Indian Reservation for the Yavapai and Western Apache people in their traditional homelands of the Verde Valley, about 25 miles from Fossil Creek. The proximity of this reservation to Fossil Creek helped maintain the close connection of Western Apache and Yavapai people to this sacred area. In 1992 the Yavapai and Western Apache Tribes renamed themselves the Yavapai-Apache Nation (YAN) to highlight the distinct but blended nature of their cultures. The YAN now represents five tribal communities in central Arizona, including Camp Verde.

Fossil Creek was not always free flowing. In 1908, what is now the Arizona Public Service utility company began construction of the Childs-Irving Hydroelectric Facilities (dam and flume system) on Fossil Creek, which remained in place for a century. Many Western Apache and Yavapai people contributed their labor to the dam's construction. They continued to help maintain the hydroelectric facilities for decades until their traditional homes and small schoolhouse along Fossil Creek were bulldozed and removed by the Arizona Public Service in the 1950s.

In 2005, Arizona Public Service decided to decommission the hydroelectric facilities. At this time, the YAN advocated for the Forest Service to retain a road that provided important access to Fossil Springs for YAN Tribal elders and for emergency response crews, in case

cultural resources and/or personal safety were at risk. Although regional Forest Service representatives verbally agreed, they did not honor this agreement and removed all infrastructure to mitigate potential liability. This decision created tension in the relationship between the YAN and the Forest Service, and the YAN maintains that this decision was an act of mismanagement.

Upon decommissioning of the hydroelectric facilities in 2009, the river was officially designated as a WSR. This created new challenges pertaining to managing skyrocketing visitor use and associated impacts by visitors, including litter, human waste, vehicle congestion, and alcohol and drug use. This in turn created challenges for the YAN to maintain access and connection to Fossil Creek. As a result, the YAN requested that the Forest Service change management approaches to reduce visitor impacts and increase Tribal access. The Forest Service responded by installing restrooms, initiating temporary closures, and implementing a visitor permitting system over the following decade. To ensure that these changes continued to respect and accommodate YAN access to Fossil Creek, Tribal representatives have worked iteratively with the Forest Service since 2009 to update and implement a permit system specifically for Tribal members.

In addition to working collaboratively to maintain cultural access, the Forest Service sought input from the YAN in drafting the CRMP for the newly designated WSR, including identification of ORVs and development of a monitoring plan. To identify and prioritize protection of sacred sites and include Indigenous Knowledge in the CRMP, Coconino National Forest archeologists iteratively provided drafts of the heritage section of the CRMP to YAN representatives for review and comment. Together Forest Service staff and YAN representatives developed thresholds for monitoring and management of the traditional and contemporary cultural values ORV. This included language stating they would be “*degraded if traditional cultural practitioners, principally Yavapai-Apache Nation, determine that the accumulation of adverse impacts impairs the Fossil Creek area.*” In this way, the CRMP codified shared stewardship with the YAN and ensured that continued access and use of Fossil Creek by YAN Tribal members is incorporated into the cultural ORV.

In addition to direct Tribal consultation, shared stewardship of the Fossil Creek has continued in several capacities. For example, to offset the financial costs of YAN involvement in CRMP development and implementation, the Coconino National Forest funded a Forest-wide Challenge Cost Share Agreement with the National Association of Tribal Historic Preservation Officers, a national non-profit organization with a mission to support Tribal historic preservation programs. In another example, the YAN, Forest Service, and Arizona Game and Fish Department co-convened the Fossil Creek Working Group from 2015 through the beginning of the COVID-19 pandemic to involve a suite of stakeholders and rightsholders. Additionally, the Coconino National Forest secured Burned Area Emergency Response funding following the Backbone Fire of 2021 to support field trips with YAN elders and high school youth to monitor archaeological sites in Fossil Creek. Additional funds were made available as part of the CRMP six-year budget (2021-2026) for the cultural monitoring program.

Alongside co-development of the traditional and contemporary cultural ORV, the YAN, along with the Tonto Apache Tribe, decided to pursue a nomination for a Traditional Cultural Property within the Fossil Creek WSR corridor—a designation that would both document history and culture for future generations and ensure that the Tribes have a say in

management through Section 106. Together, the YAN and Tonto Apache Tribe worked with the Tonto National Forest to cooperatively initiate the nomination process, providing necessary documentation and consultation with the Arizona State Historic Preservation Office, the Forest Service Regional Heritage Office, and other Tribes. However, the nomination process was stalled due to the need for more documentation paired with the turnover of Forest Service project staff.

Conclusions

Wild and Scenic Rivers are important sites for human history and culture; Federal-Tribal shared stewardship of WSRs can transform relationships and river management. Tribal perspectives may offer more holistic management approaches and improved resource protection. Shared stewardship may also further strengthen Federal-Tribal relationships when Federal land managers prioritize and develop meaningful, respectful communication. Through formal agreements, secured funding for on-the-ground work, and regular opportunities to inform the planning process, Federal representatives can bolster Tribal involvement in WSR management. There are many opportunities to build Federal capacity to engage with Tribes and meet Federal commitments of shared stewardship. Future research could examine how these findings may differ across WSR type; for example, partnership WSRs like the Wood-Pawcatuck WSR that is managed through a stewardship council with Federal financial and technical assistance. Although this work focused on Federal-Tribal co-stewardship of WSR, many of the findings may be generalizable to other agency programs and external partners working to build meaningful partnerships with Tribes. Future work is needed to prioritize and advance the identified opportunities to strengthen Federal-Tribal shared stewardship of WSRs.

Study Background

Rights-based management approaches have been proliferating across the U.S. Federal government since the 1990s, including through shared stewardship arrangements with Tribes. Within the context of land management, shared stewardship is an intentionally broad term that encapsulates any formal or informal collaborative governance approach towards knowledge, action, or resources that informs how decisions about land are made and executed (USDA 2018). These approaches can maintain or restore Indigenous relationships with the land as well as recognize and uphold Tribal treaty rights and Indigenous Knowledge (IK) (USDOI & USDA 2021; Washburn 2022). However, little work has examined approaches that lead to effective shared stewardship arrangements. This creates many challenges for Federal managers who are now called on to enhance consultation, coordination, and collaboration with Tribes (USDA 2023). Even less is known about shared stewardship of waters, though the centrality of rivers to American cultures and communities is well documented. Rivers designated as Wild and Scenic (WSRs) contain Outstandingly Remarkable Values (ORVs), including scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values. The ORVs are identified in the enabling legislation or the Comprehensive River Management Plan (CRMPs) because they are rare, unique, or exemplary feature at a regional or national scale.

Understanding if and how Tribal treaty rights, worldviews, culture, and indigenous knowledge are reflected within CRMPs and ORV categorization and identification is challenging because the text of the Wild and Scenic Rivers Act lacks direction on Tribal engagement. This may be especially important to understand given the role of rivers as life-sustaining water sources that have long connected Tribal communities to each other, the ecosystem, and to important subsistence and cultural resources (e.g. Bland 2017; Ellis and Perry 2020; Sowerwine et al. 2019). This research addresses the following research questions:

1. What does WSR Federal-Tribal shared stewardship look like?
2. What factors influence the success of Federal-Tribal WSR shared stewardship?
3. What opportunities are there to strengthen Federal-Tribal WSR shared stewardship?

Methods

This work relied on a comparative case study approach. Case studies offer an in-depth look at a particular “case,” or a particular unit in a particular moment in space and time (Yin 1994). Through the case study approach, a unit is examined in-depth to understand how social actors operating within the unit respond to and create different socio-cultural worlds and meanings about the unit (Yin 1994). Findings from case studies are limiting because they are non-generalizable, yet they are often highly trustworthy and useful for building an understanding of processes (Suresh 2015). When two or more cases are examined in concert, that is called a comparative case study approach. Comparative case studies are useful for identifying, exploring and understanding how different dynamics may lead to divergent or similar outcomes and can offer more explanatory power than a singular case (Bartlett and Vavrus 2016).

We worked with the Interagency Wild and Scenic River Tribal Subcommittee (hereafter, the committee) to identify cases of interest based on WSRs with recent updates to CRMPs that included explicit efforts to incorporate Tribal perspectives. Using recommendations from the committee, we reached out to initial key informants and relied on purposive sampling, asking each key informant for recommendations for who else we should reach out to. Interviews were open-ended, meaning we relied on general topics of interest to guide the discussion, enabling us to obtain information specific to each key informant’s experience and knowledge base. We stopped interviewing new people when we reached saturation, meaning no new key informants were recommended and no new ideas or themes emerged from the interviews. In total, we interviewed five Federal employees from the Eleven Point River and nine from Fossil Creek. In addition, we interviewed three YAN representatives from Fossil Creek but were unable to interview Osage Nation representatives in time for this report.

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